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the **VICTORIAN** **NATURALIST**

Vol. 86, No. 9

September, 1969



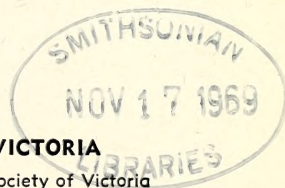
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F.N.C.V. DIARY OF COMING EVENTS

GENERAL MEETINGS

- Monday, 8 September**—General Meeting in National Herbarium, The Domain, South Yarra at 8.00 p.m.
1. Minutes, Reports, Announcements.
 2. Correspondence.
 3. Subject for evening—"The Coolart Story", Mr. W. Davis.
 4. New Members—
 5. General Business
 6. Nature Notes and Exhibits.

GROUP MEETINGS

(8 p.m. at National Herbarium unless otherwise stated)

Thursday, 11 September—Botany Group Meeting.

Wednesday, 17 September—Microscopical Group Meeting.

Friday, 26 September—Hawthorn Junior F.N.C. Meeting at Hawthorn Town Hall at 8 p.m.

Wednesday, 1 October—Geology Group Meeting.

Thursday, 2 October—Mammal Survey Group Meeting in Fisheries and Wildlife Rooms at 7.45 p.m.

Friday, 3 October—Preston Junior F.N.C. meeting in Rechabite Hall, 251 High St., at 8 p.m.

Monday, 6 October—Entomology and Marine Biology Group Meeting.

Thursday, 9 October—Botany Group Meeting.

Friday, 10 October—Montmorency District Junior F.N.C. meeting in Scout Hall Petrie Park, Montmorency at 8 p.m.

F.N.C.V. EXCURSIONS

Sunday, 21 September—Churchill National Park. Leader Mr. F. Zirkler. The coach will leave Batman Avenue at 9.30 a.m. fare \$1.50, bring one meal. Please make bookings for this excursion direct with the leaders as the excursion secretary will be on holidays.

Friday, 26 December to Sunday, 4 January—Mt. Beauty. A coach has been chartered for this excursion which will remain with party for use in day excursions to the Bogong High Plains, Mt. Hotham and other places. Accommodation has been booked at the Mt. Beauty Chalet for the coach party at \$6.00 per day dinner, bed and breakfast with picnic meals available at 50 cents. The inclusive coach fare of \$20.00 should be paid by the November general meeting to the excursion secretary all cheques being made out to Excursion Trust. Accommodation to be paid for individually.

The Victorian Naturalist

Editor: G. M. Ward
Assistant Editor: P. Gahan



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Front Cover:

Reproduced here is one of Mrs. Edith Coleman's photographs of the echidna named "Prickles". The story of "Stickles" and "Prickles" appeared in the *Vict. Nat.* for October 1938.

September, 1969

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SMITHSONIAN
INSTITUTION

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Readers' Nature Notes and Queries

These columns are available for all members, young and old, to bring before others their own observations in nature. Correspondence may be sent to the Editor, 54 St. James Road, Heidelberg.

Crimson Chats

W. Denny of Lavers Hill Victoria writes—

Mr. Chisholm mentions in his Bright days in Birdland having observed the Crimson Chat in Maryborough (Vic.) last October. He thinks it may be the most southerly record for this bird.

However I think I can claim that, with an observation last December (1968), I saw a male bird at Marengo, a small village about 2 miles south of Apollo Bay on the Ocean Road, and as the crow flies, approximately 5 miles from Cape Otway, which is the second most southerly part of Australia. Wilson's Promontory is the first.

The bird was clearly seen and I am almost sure the female was there too, but I caught only a glimpse of her and it was before I saw the male and I concluded it was a beautiful firetail.

I was at Round Hill Reserve and had as my travelling companion from the Congress (R.A.O.U.) at Canberra Mr. Winston Filewood of New Guinea. We saw the birds often at Lake Cargelligo and attempted to photograph the nest; this was in October and November 1968.

Strangely enough had one substituted Lake Cargelligo's expanse of water for the Southern Ocean, the habitats were almost identical. The site is the Apollo Bay rifle range, there are clumps of bramble dotting the long dry grass right to the water's edge.

I first saw these birds out of Broken Hill when I drove Gordon Binns (R.A.O.U.) (general secretary and past president) there to see the wedge bill and am perfectly familiar with them.

A new bird for one's district is always a thrill, I was most excited at my discovery.

Brush Turkeys

Mr. W. R. Gasking, who wrote the

notes on Black Swans in these columns last month, also sends these notes.

One warm day at the Sir Colin MacKenzie Sanctuary at Healesville, I was watching the Brush Turkey male. He had a large, well heaped mound, and appeared excited—running about the aviary, chasing the hen whilst she remained on the ground, and often lightly scratching the top cover of the mound. I suspected that a hatching was imminent, so waited. Already, a number of chicks had hatched.

Presently I became aware of a strong perfume not unlike lemon essence. This was only noticeable for a short time, but during that time the male bird was extremely excited. There was no sign of movement from the mound; which may have indicated an emerging chick. There was no wind at the time, which may have carried the perfume to the area. I unsuccessfully searched around for the source. Returning to the aviary on the other side, I again noticed it, and saw that the bird was excited. No plant was in flower nearby, which could have accounted for the scent.

Presently I was called away for an hour or so; and upon my return the male had quietened down and was quietly scratching; while a newly emerged chick perched on a branch, about five feet above the ground.

I often wonder if a connection exists between the perfume, and the emergence of the chick. Perhaps it stimulates the male into an aggressive attitude towards intruders whilst hatching takes place.

Can any other reader comment upon this?

[Although birds have nostrils, it appears that their sense of smell is poorly developed; and to rely on such a sense for an indication of an important event seems unlikely. Perhaps the untimely presence of a human caused the excitement. (Ed.)]

Frog-hunting up the East Coast

Part 2

by DENSEY CLYNE

My next stop was at Gin Gin, west of Bundaberg in Southern Queensland. The Council Rest Area where I camped was close to Gin Gin Creek, and bordered on one side by an extensive grassy swamp.

At dusk, when I arrived, numerous Dwarf Tree Frogs (*H. bicolor*) were calling from grass stems and twiggy plants, clearly silhouetted against both the evening sky and its reflection in the water. This little frog is very variable in the proportions of green to brown skin colouring; the skin is usually smooth, but here I found two specimens with small raised warts or pimples scattered lightly over the dorsal surfaces. The call appeared similar to those of the New England District.

By nightfall, it was clear that the swamp was a habitat for a vast number of frogs of several different species, and I spent three or four hours wading about with a torch. The water was nowhere more than 15 inches deep, and apart from reeds and grass there were clumps of thicker vegetation partially submerged, and paperbark and eucalypt trees around the edges.

From the grass among trees around the drier borders of the swamp, came single, repeated notes, rather like the call of the Common Froglet (*C. signifera*) but a little shorter and lower-pitched. The tiny frogs were very hard to locate, a call invariably seeming to come from several feet ahead when I was in fact almost treading on the caller. They were concealed in shallow hollows in the dry earth under grass

and debris, and the dark inflated vocal sacs of the calling males were not easily picked up by the torch beam. These frogs turned out to be the Yellow-spotted Toadlet (*U. marmorata*) and this was the first time I had heard their call.

A small group of Brown Frogs (*L. peroni*) could be heard in soft chorus around the edges of a clear pool, and in the distance, the twanging notes of several Banjo Frogs (*L. dorsalis*).

At dusk I had heard a shrill, long-drawn-out bleating call a little like that of Keferstein's Tree Frog (*Hyla dentata*) coming occasionally from the trunks of Eucalypts around the rest area. Now, in the dark, the calls came from every part of the swamp, close to the water. There must have been scores of individual frogs, and the entire chorus appeared to resolve itself into alternating high and slightly lower calls. The inflated vocal sacs of the calling males were almost transparent.

This species was identified later as *H. rubella*. It is a small, light brown frog, unpatterned except for a broad, darkish, diffuse band which runs along the flanks. A smaller stripe may run forward on either side from the groin up towards the midline, and also a faint broad band of the same darker colouring down the centre of the back.

In its call, its general body proportions, and the characteristic twist of the head on the rather long body, this frog resembles *H. dentata*. It is interesting to note that round about the N.S.W./Queensland border it appears

to take over from *H. dentata*, which occurs south from there to the Jervis Bay area.

From a paddock across the highway, I heard a call every now and then which at first I took to be Peron's Tree Frog (*H. peroni*) warming up—a few loud, clear notes, descending the scale. However, it never became the long, jackhammer call that I expected, and I was unable to find the caller.

My most interesting encounter that night was with the Rocket Frog (*H. nasuta*). A series of calls was coming from some partly submerged shrubs at a distance from me; they started quietly and worked up to an excited yapping sound which came in irregular, rapid bursts, and continued long enough for me to approach and see the caller. I had never seen the species before, but it was easy enough to identify—a small, streamlined frog, with dark brown longitudinal stripes on a light background, it sat on a partly submerged log pointing at an angle to the sky the unmistakeably long snout that gives the species its common name. This frog belongs to the *H. lesueuri* group, some members of which are very difficult to distinguish apart, but no other species of *Hyla* in Australia has such a long snout as the Rocket Frog. The body measures about 40-50 mm from snout to vent.

The only other species in the swamp was identified by its call the next morning, though I did not see it—the Striped Marsh Frog (*L. tasmaniensis*).

Early next morning, Eric Zillman, well-known local naturalist, turned up in his Landrover and offered his help, and we drove around the area to look for further species. *L. tasmaniensis* and *L. peroni* were calling around the edges of paddock ponds. We found numbers of *H. rubella* clustered under the bark of logs and trees, but the most interesting find was a group of

frogs under the bark of some tree-stumps left standing in a swampy paddock. At first sight I exclaimed "Hyla peroni!" but some aspects of the frogs immediately puzzled me. The general colour was mottled brown, sometimes changing to plain putty colour. In the groin and hidden thigh areas were the bright yellow and black pattern of *H. peroni*. But the tiny emerald green specks found on the dorsal surface of the latter were missing. The eyes of *H. peroni* are rather remarkable, being large and protuberant, and showing, in daylight, an unmistakeable cross at the centre of the golden iris. These Gin Gin frogs not only lacked the cross, but the upper part of the iris was bright red! The Australian Museum later identified them tentatively from photographs as *H. rothi*, a close relative of *H. peroni* which perhaps replaces it in the north. I wondered if the *H. peroni*-like calls heard the night before could have been those of this species.

That night, Eric called for me again and we drove across country in the landrover three miles upstream to where Gin Gin Creek ran between steep banks through scrub or rain-forest. We left the landrover and stopped for a few minutes by a narrow stream bordered by grass and bog, where I recorded a group of Rocket Frogs. Two males of this species calling alternately make a sound like a saw; several together make an excited gobbling noise like the word "double-u" repeated faster and faster. Bursts of calling last for a few seconds, to be repeated after a long pause.

Eric had told me about mysterious, loud frog calls he had heard previously in the vicinity of the creek, and as we moved into the rain-forest, we heard in the pitch darkness a single, deep, resonant "Wahk!" from the bank high above the water. This was echoed by

other frogs spaced well apart on the floor of the rain-forest, which was covered by a litter of large, crisp leaves. Our torches revealed nothing; we moved up the bank and tried to pinpoint one of the calls, but our footsteps on the dry leaves silenced the callers too soon.

We settled down to wait, and after a while the calls started up again in the distance. I switched on the tape-recorder, but it was not sensitive enough. Then apparently from right underneath us came a loud, clear "wahk!" which was repeated by several other frogs close by. I recorded them for a few minutes, but we still hadn't seen anything of the frogs themselves, though we cleared away a large section of leaves and debris. But later Eric spotlighted a pair in amplexus (the mating position) a few yards away, and I was able to identify the species as *Mixophyes fasciolatus* the Great Barred Frog.

This is a large, handsome species. up to 100 mm in length, yellow-brown in colour with yellowish sides blotched dark brown. The legs are strikingly patterned with dark brown triangular

bars, and the arms are similarly but not so clearly barred. A dark stripe begins at the snout, narrows towards the eye and continues from behind the eye over the distinct tympanum or eardrum. The eye is very dark. This is one of several very similar *Mixophyes* species found up the coast. We captured two more specimens, which I photographed later.

On the way back to the landrover we caught several very active, bright yellow frogs of the *H. lesueuri* group, with rather pointed snouts. These were never identified satisfactorily from the specimens, but from photographs were later thought to be *H. lesueuri* itself, though they appeared to me to lack all the relevant colour patterns and to have too long a snout. They were so active that they got loose several times in my van and I found them down the bed in the morning, luckily unsquashed.

Then on the sandy shore of the creek Eric found two fat little frogs, attractively patterned in shades of brown with red specks. I was a little baffled by these; that they were burrowing frogs was obvious from the shovel-

Rana daemeli
(See text page 270)



photo: Author

shaped metatarsal and metacarpal tubercles, and they appeared to swell considerably when placed in a container with water, as though capable of aestivating. Next day Eric took me to a property where a load of sand had been dumped by a water trough. He remembered having seen some small frogs being dug out of the sand. Sure enough, he dug out a couple more, and they were the same species as those of the night before. They turned out to be *L. ornatus*, the Ornate Burrowing Frog, a relative of the three other *Lymnodynastes* species encountered on this trip, but very different in appearance.

I drove on up to North Queensland, and my first trip from Cairns was made a few days later with David Cassels, a young member of the North Queensland Naturalists' Club. He had volunteered to show me some little frogs I was keen to photograph and record, and knew exactly where to find them. We drove up into the mountains, turned north towards Mossman, and then left the road to follow a timbermen's route through the jungle high up

on a mountainside, 70-odd miles from Cairns.

I parked the van, and David showed me a way down the steep bank of a creek that flowed swiftly between boulders of wet, black rock. "Listen!" said David, and I heard above the rush of many small waterfalls a rapid, metallic "tink, tink, tink, tink, tink, . . ." like a spoon tapped against a glass.

As soon as we reached the creek, David bent and picked something up from the edge of a shallow pool full of tiny leaves that had fallen from the dense trees above. "This is it," he said, and so it was—*Taudactylus acutirostris*, which I immediately christened the Tinker Frog. The specific Latin name means "sharp beak", and this species has an even more acutely pointed snout than *H. nasuta*; it is so long that the nostril is halfway between the eye and the tip of the snout. It is not, of course, a "tree frog"; and it is much smaller than *H. nasuta*, the female measuring about 30 mm and the male a little less.

Several males were calling, but as they seemed to prefer niches behind or

Continued on p. 269



Taudactylus acutirostris
the "Tinker Frog".

photo: Author

Book Reviews

The Life of the Emu

by MAXINE EASTMAN

Angus & Robertson 1969, 72 pp. 87 b and w 12 coloured photographs and line drawings. \$4.50

The author is an American who travelled extensively over much of Australia with her husband Bill Eastman, Jnr. when collecting material for his book "Parrots of Australia" of which he was joint author with A. Hunt of Inverell in New South Wales. This is a book of a collection of photographs taken by Mrs. Eastman on her

travels, of a bird which must have attracted her immensely—the Emu.

The chapters cover quite a variety of subjects such as Importance of Water, Nesting and Courtship, Looking after the Young, Emus and Aborigines, and their Territory.

Written in a popular style and well illustrated this is a very good book for both the child and the adult.

A Handlist of the Birds of South Australia

by H. T. CONDON

2nd Edition Published by the South Australian Ornithological Association 1968. 141 pages, 4 maps, 4 photographs and 2 drawings. \$3

Mr. Condon has revised and enlarged the Handlist to make it an excellent ornithological publication covering the bird species that are listed for South Australia, some 423 native birds.

Mr. Condon's work has involved all the latest trends of taxonomy and this up-to-date standard is quite different in most cases to the Official Checklist of the Birds of Australia published by the Royal Australasian Ornithologists Union in 1926. Mr. Condon however

is now working on a new R.A.O.U. Checklist and this South Australian Handlist could well point the way for things to come.

His grouping of the Yellow Rosella with the Crimson Rosella may not meet the approval of some ornithologists, but taken all round Mr. Condon has put a tremendous amount of thought and research into this Handlist and it is undoubtedly a worthy addition to the outstanding works on Australian Ornithology.

Roy Wheeler, Windsor, Vic. 3181

Australian Wildflowers in Colour

Photographs by DOUGLASS BAGLIN, text by BARBARA MULLINS

Syd., A. H. and A. W. Reed, 1969. \$3.95. Hard cover with dust jacket. Approx. 7" x 7½". 112 pages.

Douglass Baglin and Barbara Mullins have collaborated several times to produce books on Australian flora, e.g. Australian Eucalypts and Australian Wattles. Mr. Baglin is a well-known commercial photographer noted for the clearness and exacting detail of his

work. Barbara Mullins, a journalist, is a co-author of the popular book for the home gardener Designing Australian Bush Gardens. Their latest effort, Australian Wildflowers in Colour,

(turn to page 275.)

Further Investigations in the Kent Group

by M. A. MARGINSON and S. MURRAY-SMITH*

The Kent Group of islands is situated in Bass Strait, approximately half-way between Wilson's Promontory and the northern tip of Flinders Island. It consists of five islands, only one of which, Deal Island, is inhabited (by two lighthouse families). Deal Island is also the largest of the Group, at the widest extent measuring four miles by three and a half miles. It rises to about one thousand feet, and the upper slopes are covered by low forest growth, though much of the island is grassland, formerly grazed. The Australian Conservation Foundation has approached the Commonwealth government (which owns Deal Island) to extend permanent protection to the flora and fauna of this splendid island.¹

Across the strong tidal waters of Murray Pass lie the Tasmanian islands of Erith and Dover, considerably smaller than Deal Island, but each about two miles across at their widest extremes. Erith Island is held under a grazing lease. Dover Island holds special interest as the last island of any size remaining in Bass Strait which remains untouched by the hand of man. The Australian Conservation Foundation is also seeking its protection.

At a further distance from the Kent Group lie two seldom-visited and smaller islands, North East Island and South West Island.

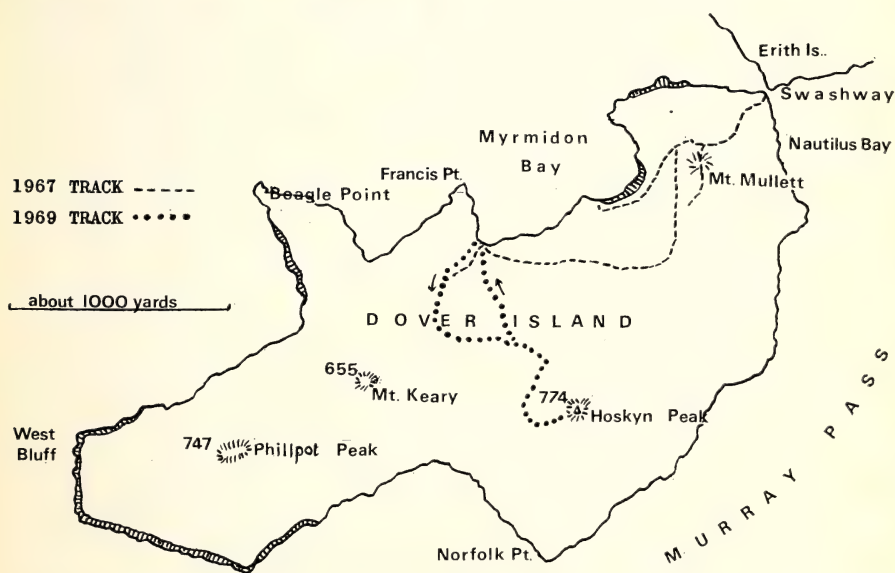
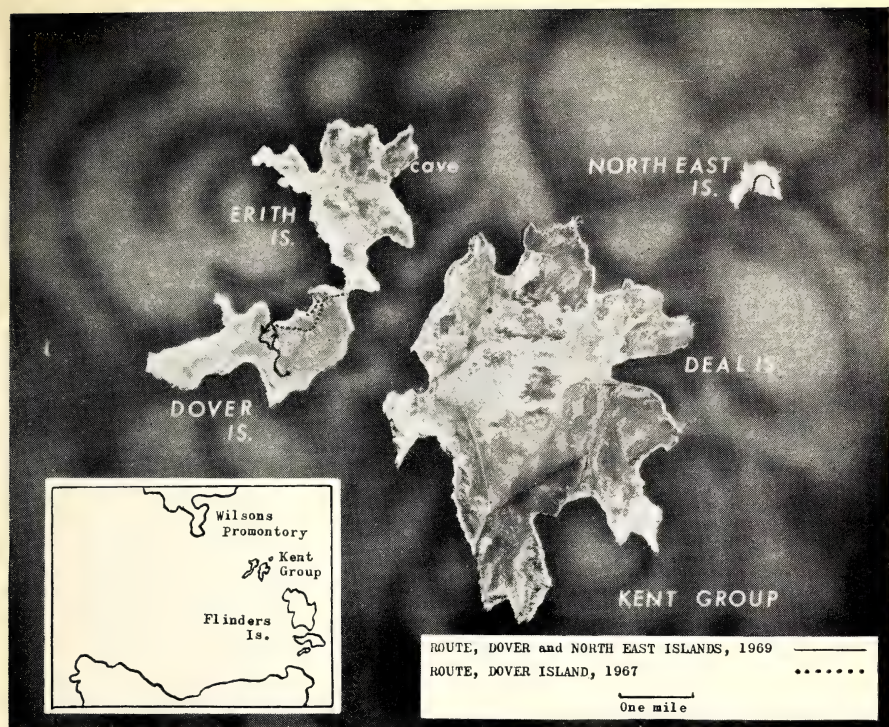
The authors of this article belong to a group which has been regularly visiting the Kent Group since 1962. During December 1968 and January 1969 five weeks were spent there, with headquarters on Erith Island, and investigations commenced earlier were continued. An account of these earlier investigations, together with some

background historical material on the Kent Group, will be found in the *Victorian Naturalist* **84**, (8) for August 1967.² The first of the authors of this article is a biochemist, the second a historian, so neither lays claim to any professional knowledge in the field of natural history.†

We may, however, draw attention to the fact that scientists are now placing considerable emphasis on the existence of the Bass Strait islands and on the importance of the planned approach to all that happens in these waters: fishing, extractive industries, farming on the one hand, the conservation of the flora and fauna on the other. "Bass Strait is the world's largest area of shallow water so close to a major metropolis that is so little studied and so poorly understood," said J. W. Warren (Professor of Zoology, Monash University) in the recent series of twelve talks on Bass Strait broadcast by the Australian Broadcasting Commission.³ Mentioning the islands of Bass Strait in the same breath as Darwin's Galapagos Islands, Professor Warren remarked that in Bass Strait biologists have "a marvellous opportunity to study the effects of isolation and restricted

* Both of the University of Melbourne.

† Our group is deeply indebted to Mr. Brian Stackhouse, of Flinders Island; to Mr. Frank Gould, of Port Albert; to Mr. and Mrs. Bob McNeill, of Deal Island; to Mr. and Mrs. Ron Millington, then of Deal Island, and to Mr. and Mrs. Jack Lierich of Port Welshpool. Comalco Industries Pty. Ltd., through the good offices of Mr. Dean Bunney, kindly supplied our party with a twelve-foot aluminium dinghy which proved seaworthy, robust and easily portable, and without which our explorations would have been rendered impossible or vastly more difficult. Captain H. M. Head, Regional Director (Victoria) of the Department of Shipping and Transport, as on previous occasions kindly extended to us the important privilege of emergency wireless communication via the Bass Strait light-house network.



interbreeding between populations" which "may be unequalled anywhere else in the world". Dr. Jeanette Hope, speaking in the same series, mentioned that for a country of its size Australia has very few offshore islands, and that of these "the islands of Bass Strait are amongst the most important, both historically and biologically".

NORTH EAST ISLAND

North East Island lies rather more than a mile off Deal Island, but the distance is deceptive. Although the ornithologist A. J. Campbell was pulled over to North East Island in 1890 in a whale-boat skippered by the veteran lightkeeper Captain Charles Brown, it would not be a trip to be essayed lightly in an oared boat today. Weather in the middle of Bass Strait is notoriously variable, and our own visit, which was made in Mr. Frank Goold's 48-foot fishing boat *Marjorie Phyllis* (locally called the "ketch"), started in calm but misty conditions, had pleasant sunshine during the couple of hours we were on the island, and returned to the main Group in the teeth of a strong and unpleasant westerly.

Campbell, a member of the 1890 Field Naturalists' Club of Victoria expedition to the Kent Group,⁴ called North East Island "a huge, coarse, granite rock, with beetling walls all round".⁵ The island is rather under half a mile long, with mounts at each end (the higher 340 feet) connected by a lower saddle. While the ketch hove to some hundreds of yards offshore, members of the party were ferried ashore in our dinghy (ably handled in a rather difficult swell by Mr. Robert Newton), to land at the apex of the embayment to the south of the island.

The first scramble is up a steep gully to the saddle, and it was not long before we gained our first and dominant impression of the island — that the

whole surface abounds with life. "Surface" is perhaps misleading, for much of the life is beneath the surface, and walking everywhere is difficult because of the ubiquitousness of the mutton-bird and penguin burrows. One member of the party was considerably disconcerted at finding his big toe in a mutton-bird's beak. Fortunately the Bass Strait folk-lore which prophesied snakes proved unfounded (the only snakes observed in recent years in the Kent Group have been the White-lipped, *Drysdalia coronoides*, which is innocuous to humans, and none of which was seen on North East Island).

Once on the saddle the choice is between the two "peaks" of the island. That on the west is a formidable knob the granite walls of which discouraged all but one foolhardy member of the party. The climb up the eastern, and slightly higher peak is a simple one. The soil is sandy with granite outcrops heavily weathered and decomposing, a feature of the rock being the large crystals of quartz and mica visible in some of the outcrops.

The vegetation pattern of the island is simple. Three species, well mingled, dominate the cover: the Blue Tussock-grass (*Poa poiformis*), the succulent Bulbine lily (*Bulbine bulbosa*) and the distinctive purple-stalked composite Fennel groundsel (*Senecio capillifolius*). The Tussock-grass, interspersed with some Fennel, has captured the upper levels of the island. None of the vegetation grows higher than about three feet. Apart from the above three species, the only other vascular plants collected were a pink and a white variety of the Rounded Noon-flower or Mesembryanthemum (*Disphyma australe*), another small succulent, the Austral Stonecrop (*Crassula sieberiana*), and the Sea celery (*Apium prostratum*), abundant on Erith Island but here found only

in isolated patches near the shoreline. A moss, *Bryum campylothecium*, was also collected, and turns out to be a new record for the Kent Group.

As already mentioned, North East Island is an extensive mutton-bird rookery, and perhaps the only such rookery in the Group. There are now no rookeries on Deal, Dover or Erith, though on Erith at least there is plentiful evidence of earlier mutton-bird occupation. (The nesting of mutton-birds on South West Island has yet to be established.) The mutton-birds nest up to the crest of the island, but the penguin burrows appear to extend only to about two hundred feet. Penguin chicks were seen and handled.

A number of gannets were seen, fourteen or more at one stage, and as they were circling the island, highly disturbed, there is some presumption of nesting.

The most interesting single zoological observation on North East Island was, however, probably that of Dr. John Newton, who clearly and for some time sighted a small mouse-like creature. This was almost certainly a marsupial mouse, either the Swamp Phascogale (*Antechinus minimis*) or the White-footed Dunnart (*Sminthopsis leucopus*). Mrs. Geoffrey Hope has kindly suggested that, while the latter is perhaps more likely (and is found in the Furneaux Group), *Antechinus*, which is a larger animal, is more widely recorded. Some bones have been found on Deal Island which belong to one or other of these species, but no further identification has been made. Few records for the Bass Strait islands of either species have been established.

Ants and spiders were also noted on North East Island, and the plentiful faeces, both weathered and fresh, of the Cape Barren Goose. No actual Geese were seen, however, though local reports within the last ten years

tell of Geese breeding there, and of fishermen running down the immature birds for use as crayfish bait. A pair of Geese landed on Deal Island some two or three years ago, and excellent photographs were taken by Mr. Kevin Underwood, a lightkeeper. More recently a pair were shot and killed by a Port Welshpool fisherman at Garden Cove, Deal Island. All in all, from these and other observations and reports (notably, of course, those of Dr. Douglas Dorward of Monash University and of Dr. Eric Guiler of the University of Tasmania⁶) it would appear that the Geese, so very much an integral part of the landscape and *mythos* of Bass Strait, are in the process of new colonization or recolonization. This is welcome news, but while many of the Bass Strait fishermen are intelligent and thoughtful men, and conservationists, as fishermen ought to be, some remain ignorant, selfish and proud of the ascendancy they can win over nature by means of a gun. Cape Barren Geese are "sitting shots" for the armed fool, both literally and metaphorically. And not only Geese: we observed young fishermen, at anchor in the Kent Group, happily whiling away some boring hours by potshotting at seagulls. We hoped that we on shore were not in the line of fire. There is certainly a case for the Head Keeper of the lighthouse station on Deal Island being made a warden of some kind by the Tasmanian Animals and Birds Protection Board.

So far as we know, ours was the first recorded landing on North East Island since those of Colin Garreau in 1958⁷ and A. H. E. Mattingley in 1938.⁸

DOVER ISLAND

A central feature of this visit to the Kent Group was to be an attempt to reach the summit of Dover Island, Hoskyn Peak, a 774 feet eminence

midway along the island's spine. Two factors constrained the intention, physical fitness and the weather. Those of us who were going to attempt the climb had to have time enough beforehand to gradually work up the degree of physical fitness that previous expeditions indicated would be essential. Long hours spent sitting at a desk (or at a dinner table!) do not build the sort of back and stomach muscles needed for active camp work and exploring on uninhabited islands. Once a degree of fitness had been achieved, it might still prove impossible to set off immediately. Erith Island, on which we were based, is attached to Dover Island by a rock-strewn "swashway" and it might be thought that an overland route from this connection to Mount Mullett and thence to the peak would be the most practicable. But observations made in 1967 and 1968 had indicated that any such attempt was beyond our resources.² It was clearly desirable that we approach from the west, with the lay of the vegetation rather than against it; and this meant going by sea to Myrmidon Bay on the north of Dover, where the island's forbidding cliffs give place to a rocky strand covered with large granite boulders. At this time, we knew of no other place where a landing might be effected with any degree of safety or of accessibility to the hinterland. We therefore needed calm weather with neither wind nor swell running from the west—a difficult requirement in the roaring forties.

Eventually the disposition to go, the right weather and a feeling of physical preparedness came at once, and on a beautiful, calm day (21 January) with only a slight breeze and the gentlest of south-westerly swells, we set out by dinghy from the West Cove of Erith Island, a party of three men (the authors and Dr. John Newton) and two teen-agers

(those who explored the Cave of Erith—see below). Arriving at the swashway between Erith and Dover with the tide well out, we had just breath enough left after portaging the dinghy and outboard across one hundred yards of tumbled boulders and sharp granite sand to thank the man that invented aluminium boats. We then motored along the north of Dover a little over a mile, and high into the cove of Myrmidon Bay, where we landed as we had in 1967 amongst the granite boulders.

By 11 a.m. we were climbing easily on one side of a dry water-course and within fifteen minutes had reached an elevation of 350-400 feet. Here we found ourselves in an extraordinary climax forest of Coast Tea-Tree (*Leptospermum laevigatum*) dominant to about twenty feet, interspersed with sub-dominant Swamp Paper-bark (*Melaleuca ericifolia*) and Common Fringe-Myrtle (*Calytrix tetragona*) growing to about ten feet. Where, for one reason or another, there was a little more light on the forest floor, occasional bushes from four to six feet of the Crimson-berry (*Cyathodes juniperina*) of the Large-leaf Bush-pea (*Pultenaea daphnoides*) and of the Variable Sallow Wattle (*Acacia mucronata*) were found. Among the very few readily noticeable plants on the forest floor were found the Sea Box (*Alyxia buxifolia*) and the Red Correa (*C. reflexa* var. *nummulariifolia*) all of them less than a foot high. The presence of so many species makes this forest sound a lively place, but this was not so. We shall long remember those moments spent, often on all fours, forcing our way through a tangle of dead wood, rotting or tinder dry, where death seemed more in evidence than life, with the loose chocolate-coloured, friable soil showing between weathered, crumbling granite rocks, with lichens, moss and

decay everywhere. Much of Dover Island is one big wood heap, and it is a minor miracle that it has survived as such into this savage and destructive age. We are convinced that the Tasmanian Government ought to act quickly to declare this remarkable island not only a national park but a wilderness area, under the supervision of a sensitive and informed ranger. One careless act of a fisherman or a yachtsman, or a stray ember from a fire elsewhere, could destroy this unique ecological remnant. Equally it is a minor miracle that no lightning strike has set it ablaze, and we are also convinced that a properly staffed biological expedition should make an immediate and intensive study of Dover in case a calamity does eventuate.

No description of this forest would be complete without mention of the little Hop Goodenia (*G. ovata*) with its quiet apple-green leaves and yellow flowers contrasting oddly with the decay all around it. Indeed, so widespread is this plant in these islands, that any future Republic of the Kent Group would most likely adopt its little flower as the national emblem!

Striking up towards the main ridge which connects Hoskyn Peak and the centre, though lesser, peak of Mount Keary, we found occasional rocky outcrops which allowed more light to penetrate into the forest so that the whole aspect of it gradually changed, new species appearing and the bare, dry timber of the tea-tree yielding some place to leafier species. Just below the main ridge we saw our first eucalypts of this trip (probably the Manna Gum, *E. viminalis*) with green leaves pleasantly placed low down where we could see them and not in an umbrella above us. This gum was growing to about twelve feet here, as high as we saw them anywhere, but as yet it was not plentiful. We gain

the impression from their distribution here and on Deal Island that gums don't like to be too near to places where salt-spray can reach, but we are not botanists and this must remain an impression. Typically, the granite outcrops just below the main ridge on this north to north-easterly aspect were surrounded by a mixture of trees and bushes about ten feet high, with perhaps the most common being the White Kunzea (*K. ambigua*) interspersed with isolated casuarinas, eucalypts and the Coast Tea-tree. Looking up the slope, we noticed that the general height of the vegetation was diminishing conspicuously to about six feet and we began to think that our battle with it might be over before it had fairly begun, and that we had exaggerated the likely difficulties. We were soon to know otherwise.

It was worthy of record at this stage that, although there were plenty of crickets, flies, ants and lizards around us, we had seen very little evidence so far—in the way of faeces—of any large animals, and, most strikingly, we had seen only one bird since landing. This paucity of bird life had been noted previously,² and is in contrast to the abundant and varied land- and sea-bird life of Erith Island.

Creeping through rapidly condensing scrub to the main ridge, we saw many beautiful pink orchid-lilies, properly Grass Triggerplants (*Stylidium graminifolium*) and collected a specimen of the Love Creeper vinelet (*Comesperma volubile*). Suddenly we realized that the main ridge had been reached. But no open view awaited us, and the hoped-for easy passage on the weather side failed to eventuate. The weather side was clearly impassable, with a repetition of the tangled dead wood which we had seen further down. We realize now that at this particular spot the southerly slope is protected from the worst of the

south-westerly weather by the bulk of Phillpot Peak and Mount Keary and has managed to grow a thick climax cover. We were driven back to the north slopes and had a most difficult half-hour battling our way for about two hundred yards through dense, head-high scrub until we could cross the dry water-course and so come out on to the more exposed south-west slopes of the main peak. Looking back from a point about one hundred feet above the ridge and the same distance below the series of summits which constitute Hoskyn Peak, we were greeted with a good view of the Hogan islands and of Wilson's Promontory.

We were standing on a fairly steep slope, broken up by large areas of exfoliating granite, the vegetation either growing to a height of 1-3 feet in pockets between the rocks (e.g. the Oyster Bay Pine, *Callitris rhomboidea*) or a little higher (stunted casuarinas and eucalypts) or trailing across the rocks in an extraordinary fashion, blown in a north-easterly direction by the south-west winds (the Manuka, *Leptospermum scoparium*). Here and there were tussocks of *Poa poiformis*, the Blue Tussock-grass so common on North East Island. Other plants collected at this spot were the Coast Tea-tree and the red Common Heath

(*Epacris impressa*), occasional specimens of which had been seen from about three hundred feet up.

At 1 p.m. we reached a subsidiary peak on the north of the summit area and, for the first time, obtained a clear view of the main peak, some five hundred yards away and less than one hundred feet above us. We had been convinced that we were the first to come this way, but suddenly we noticed a large cairn on the main peak. We were disappointed, and someone had the bad taste to mutter something about Amundsen's black tent and Captain Scott. However the sight of this cairn strengthened our desire to reach it. As it happened, this last small stretch took nearly an hour and a half to negotiate.

First we set out in a south-easterly direction around the contour, but the presence of a ravine filled with tangled scrub caused us to alter direction to the east in an attempt to come on the peak from the direction of Mount Mullett — the very course which we had rejected right at the outset! As soon as we were a few feet below the exposed south-westerly ridge connecting the two summits, our troubles commenced. The scrub became indescribably dense and tangled. For the first time it was necessary to use a



Scrub-bashing at its worst!
The climb up Dover
Island involved several
hours negotiation of tangled
vegetation like this,
taken at about 400 feet.

Photo: M. A. Marginson

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Cairn on Hoskyn Peak, the 774' summit of Dover Island. This substantial piece of work, standing five feet high, was almost certainly built by the bluejackets of H. M. S. *Myrmidon*, a Royal Navy vessel which surveyed the Kent Group under the command of Commander R. F. Hoskyn R. N. in 1886. So far as is known this cairn was not visited between that date and January 1969.

photo: Jane Mullett



compass, as we had lost sight not only of each other but of the summit as well. Few botanical observations were made of a specific nature, but there was a general feeling that the plants were winning. What we mostly remember is that everything was closer and more tangled than we had seen before, but that it was not the strange, dead wooden world of the lower slopes. Our only two specific botanical memories of this area concern the ground—not surprising since at times our noses were very close to it. The orchid-lily was flowering in large patches and in two places there were areas, about ten feet in diameter, which were devoid of all vegetation except for scattered reeds. (These were also noticed on Dover Island by the 1967 party.) We wondered whether these were dried out marshes, but there seemed no indication of mud cracks; they remain a mystery.

After about forty-five minutes of this fruitless bush-whacking we began to lose heart and, much to the chagrin of the younger members, a survey of the almost impenetrable wilderness between us and the summit from a convenient gum tree caused us to turn back. However our teenagers had extracted a promise that on the way back to the lesser peak, where we had left our packs, we would again try to bear over to the weather side. The wisdom of this course became apparent quite shortly, since the wind seems to

prevent anything much from peeping over the inter-summit ridge. The cover dwindled rapidly, and about 2.30 p.m. we reached the cairn on the main peak, some three and a half hours and 770 feet above the boulder-strewn strand of Myrmidon Bay.

The cairn proved to be a massive thing indeed, large granite rocks being convened into a roughly cylindrical shape, five feet high and somewhat greater in diameter. In the centre there was a hole which contained nothing but a piece of much weathered stick. A record of our arrival was left protected from the weather in the cairn, and we stretched out on it to get some rest. On looking around, we became more sure that this cairn was not the product of some casual exploration (if such a thing were possible) but that of a well-disciplined party, and we allowed our thoughts to conjure up a vision of a party of bluejackets from the survey vessel H.M.S. *Myrmidon* in 1886, toiling (in orderly fashion) up the steep broken slope from the south bay of Dover to Hoskyn Peak. (Commander Hoskyn to the most junior officer, Sub-Lt. Smith: "Mr. Smith, put a cairn up there on the top by 8 bells, if you please!") For we could now see what we had failed to see before—that below us on the south coast of Dover Island there was a little rocky shore like that of Myrmidon Bay, where a landing

in a small boat would be feasible. Furthermore the slope, though broken and steep, seemed to offer nothing more difficult than a very rough scramble, being on the weather side and affording (except in isolated ravines) little opportunity for any considerable growth of vegetation. We consoled ourselves with the thought that, if ours were not the first ascent of Hoskyn Peak, then it was almost certainly the second, the first in over eighty years, and the first concerned with the scientific exploration of the island.

The view from the peak was altogether worth every effort which had been made to get there. A 360° panorama had been opened up, except where the peaks of nearby Deal Island slightly occluded the view. We could see in a magnificent sweep from the Hogans and Wilson's Promontory in the north-west and even to the long north coast of Tasmania in the south-west: sheer across Bass Strait. Looking over Deal we were astonished to see the roads of Flinders Island some forty miles away, looking so close that we were sure that we could see traffic on them! And everywhere were the lesser islands—South West Island standing out in a silver sea, the Curtis Group, Pyramid Rock and the other rocks and islets that make Bass Strait at once the fascinating and dangerous place that it is.

The flora at the summit was very much like that of the south-westerly slopes described above, granite outcrops being interspersed with the Oyster Bay Pine, Manna Gum (?) to ten feet, the Large-leaf Bush-pea and the Coast Tea-tree, with here and there an isolated, stunted casuarina. The height and composition of this cover seemed to depend very much on quite marginal differences in exposure to the south-westerlies, complete exposure stunting all these plants and driving

them into crevices. Most striking was again the Manuka, with its wind-blown growths straggling long out over the exfoliated granite, so that flattened fans of branches may stretch for up to twenty feet before the small foliage area is reached. Other verified specimens from this area, and between the summits, included the Common Fringe-Myrtle, the Tree Broom-heath (*Monotoca elliptica*), the Tasmanian She-oak (*Casuarina monilifera*), an isolated specimen of the Silver Banksia (*B. marginata*) growing some way down the south-west slope, the Sand-hill Sword-sedge (*Lepidosperma concavum*) and the Slender Rice-flower (*Pimelea linifolia*). Lichens, mosses and fungi collected on Dover are listed separately at the end of this article, but no account of the flora would be acceptable to those who were on this journey unless it mentioned the lichen *Cladonia sylvatica* with its friable balls of yellow-green dotted prolifically wherever the ground was level and a little clear, and of the equally friable mounds of the Coral Lichen (*Cladia retipora*), great chunks of which we broke off and carried around with us in a rather bemused fashion. In the summit area we also collected faeces which were probably those of the Brush-tailed Possum.

After staying nearly half an hour, we returned to the subsidiary peak in half the time of the outward journey. With energies somewhat tried we dawdled another half-hour here, savouring the impressive views to the north and to the south-west and basking on the hot rocks like lizards.

At about 4 p.m. we set out for Myrmidon Bay and, not wanting to repeat the struggle along the main ridge, it was decided to make a direct descent over the granite outcrops on the northern slopes of Hoskyn Peak. This proved to be a sensible decision, but it involved a great deal of crawling

Near the entrance to the Cave of Erith. The large heap of red earth is being faced by the figure in the foreground.

Photo: Robert Newton



on all fours over the outcrops and through dead, dry undercrofts dusty with pollen and crumbled leaves. Eventually we reached one of the dry water-courses and descended more or less directly down it. Here we met with an almost tropical tangle of vines, green plants and spider-webs—in fact Dover, like Erith, abounds with spiders. It was exhausting work, especially for the leader who elected to force his way through this difficult growth; the rest of us were pleased to benefit from his exertions. Finally, we burst out of this jungle, across a bank of succulents and on to the granite boulders of Myrmidon Bay at about 5 p.m. The whole ascent and descent had taken six hours.

Since there was still plenty of daylight left, we motored around Francis Point and then Beagle Point into the embayment on the far western end of the island. Momentarily, having the crossing of the swashway in mind, we considered rounding this end of the island, and returning home southabout through Murray Pass. But wisdom prevailed, the thought of overfalls at the entrance to the Pass in a heavily laden, twelve foot dinghy being the deciding factor. This little excursion showed that another landing point probably exists on the north-eastern side of Beagle Point, rather similar to that which we had used at Myrmidon Bay. Apart from the swashway itself, there would appear to be no other landing places than the three we have

mentioned, the rest of the coastline being composed of great granite outcrops over which the waves swill incessantly and of beetling cliffs up to six or seven hundred feet high.

Back at the swashway, we again carried our boat and motor across, the tides obstinately refusing to help us. It was then that we made our last scientific observation of the day—it is a curious fact that the specific gravity of aluminium quadruples if it is allowed to stand for six hours in the sun on a granite shore. Finally we motored into our home bay on Erith at about 7 p.m., having been away only nine and a half hours, but having been through one of the most memorable days that any of us will ever experience.

THE CAVE OF ERITH

This remarkable natural phenomenon was first entered, so far as is known, in January 1969 by Jane Mullett (16) and David Murray-Smith (15) in an enterprising exploratory walk.

The cave is situated in the north-east embayment of Erith Island, called by us Jane's Cove, and is visible from the sea as a cleft in the granite cliffs below a 466 feet high peak on the north coast of the island. From the sea the cleft appears unapproachable, but investigation shows that a practicable route lies along the rocks from the deepest point of Jane's Cove, provided that the approach is made at

low tide and preferably in westerly weather. After about a half-mile of rock scrambling a section of tumbled rocks is reached which is clearly the debris of massive rock falls from the cliffs above. Indeed many great rocks, weighing hundreds or thousands of tons, are still poised menacingly on the heights above.

The entrance to the cave lies some seventy-five feet above high-water level, and is reached by a strenuous scramble up a grass slope and then through tangled bushes and loose rocks at a forbiddingly steep angle.

The cleft appears imposing enough from the sea, but the surprise on reaching its lip is to discover its depth and extent. The cave dips down below the entrance level and then rises again, extending into the cliff face for a distance of nearly 200 feet before becoming a fissure. The proportions of the cave are regular, the height averaging about thirty-five feet.

A musty smell is immediately noticeable, but the outstanding feature is the black, powdery soil covering the floor of the cave and deadening footfalls. The black soil is dramatically interrupted by one large mound of red-powdery material, about eight feet across and three feet high at the peak, with several smaller mounds of the same material. The black base material is fifty per cent organic, and could be partly bat guano; the red material also has some organic content, we are informed by Professor G. W. Leeper, but is more like an ordinary clay-loam soil. While this would be explicable if the cave were of limestone, it is, however, a granite cave and hence the red deposits remain puzzling and samples await further analysis.

Small drip pools are evident in the cave, lined with a delicate green moss-grass, the Nodding Club-rush (*Scirpus cernuus*). Specimens of the Slender Rice-flower (*Pimelea linifolia*) were

collected just outside the entrance to the cave, and plant leaves were collected from near a water drip on the wall, some forty feet in from the entrance, but were not identifiable.

Some short stalactites up to a foot in length, covered with a fine glaze, were observed. We found what we assumed to be penguin tracks, and the skull of a crow well within the cave, together with a skull and tracks of the Brush-tailed Possum, and beetle tracks were observed in the fine dust on the floor of the cave. There were no traces of human occupation, and no Aboriginal artifacts have been found, to the best of our knowledge, anywhere in the Kent Group.

OF DOMESTICITY AND NOON-FLOWERS

Some random but perhaps interesting observations from Erith Island are worth recording briefly. Three members of the party, living on a tent-site disrespectfully known as "Chinatown", shared many of their waking hours and some of their sleeping hours with a penguin family, over a period of five weeks. This permitted a long and very close period of observation of the rearing of a pair of young penguins, until they were forced to descend to the sea for their first swim.

Despite the depredations of fishermen seeking crayfish bait from time to time, Erith Island, with the other islands of the Group, is a haven for the Fairy Penguin. They enter tents, dispute right of way on paths, fall into rubbish pits, and in general enter fully into the spirit of camp life. As is well known, their holes or "nests" may be barely above high-water mark or hundreds of yards inland and hundreds of feet above the sea. In this case Chinatown occupies a flat platform, perhaps fifteen feet by thirty some twenty feet above high water mark; actually, the site on which, some ten years ago, Mr. Jack

Part of Valley of the Noon-flowers, Erith Island. This spectacular valley at the western end of Erith Island has a floor many acres in extent covered solely with *Mesembryantemum* spp.

photo: S. Murray-Smith



Lierich built single-handed and launched a thirty-eight foot fishing boat, still sailing Bass Strait waters as the *Mir-rabooka*. (Mr. and Mrs. Lierich were in residence on Erith Island for four years.)

The pair of chicks were living in a burrow directly behind a primitive driftwood structure which the residents of Chinatown described as their kitchen. They looked, with great owl-like eyes and ruffle of brown and cream juvenile plumage, to be twice as big as the adult with them. All night long the adult(s?) brought food to them and the night echoed to the whistling of the young and the squawks of the adults. As the weeks went by and the moult into adult plumage commenced, the young became increasingly enterprising, and indeed bullying. They would emerge from the burrow and lie in wait for the cropful adult at the top of the steep bank leading up to the burrow. Then amidst frantic grunts, whistles, squawks and screeches the two young would fight for the right to thrust their bills into the parent's gullet in search of fish. It rapidly became clear as the moult progressed that one of the pair was emerging as the dominant and we watched this factor develop as the adult plumage appeared.

This plumage appeared first on the leading edges of the flippers, then on the tail, next on the back and then on the belly, until near the end the appearance of this tatterdemalion pair

was utterly grotesque, the whole of the head being covered in juvenile plumage while the body and feet and leading edge of flippers were adult. They looked as though they were wearing great helmets.

Finally, there was just a trace of the juvenile plumage left on the top of the head and on the back of the flippers. Within a few more days even this disappeared, and it was clear that the night for swimming had arrived. The whole process had taken nearly five weeks. The night before we left, they all disappeared to the sea—or so we thought. But on packing up, under one of the wooden cases we found, quivering, the more timid one of the pair, and careful observation showed that it still had just a trace of juvenile plumage. It was clear that it had been deserted, but whether it was able to take the plunge without encouragement we shall never know. It was like seeing a close acquaintance in the grip of some nameless and irresolvable dilemma.

Our second observation relates to an afternoon walk made by a number of members of the party to the far western end of Erith Island, previously unvisited except in the previous year by two teenage members of the group. The walk across the Vale of Erith to Wallibi Cove is straightforward, as the island is grazed by cattle and their paths make easy walking. From Wallibi Cove a steep hill is climbed, only to descend again the other side to a low-

lying neck of land which connects the rugged outpost of West Point to the rest of Erith Island. At this point we were astonished and delighted to see that almost the whole of this connecting piece of land, which must measure some twenty acres in extent, has an unbroken cover of *Mesembryanthemum*. Several different species are mingled together (probably a factor here would be their relative tolerance of salt spray, certain varieties predominating near the sea and others further away from it), and the general effect is that of a remarkable green carpet. In bloom the sight must be spectacular, but even as we saw it, with a background of the big seas rolling in from the west and crashing in spray on the granite shoreline and the offshore rocks, it remains one of the memorable experiences of this island. We have named this the Valley of the Noon-flowers.*

And it was in this quarter of Erith Island, between Wallibi Cove and West Point, that we observed a pair of Cape Barren Geese which appear to have taken this as their territory. So far as we know this is the first record of Cape Barren Geese on Erith Island, and may be significant in the light of the tentative evidence available, and mentioned earlier, that the geese are colonizing or recolonizing some Bass Strait islands to which they have been strangers. We were particularly pleased to see these great birds, not only because of their rarity, but because they belong to these waters and without their presence the islands seem to that degree incomplete.

THE WEATHER AT ERITH ISLAND

We have often been interested in the weather patterns of Erith Island. To those accustomed to summers on the

nearby Victorian mainland, for instance, the differences are striking. The most noticeable general difference to the layman is that on Erith Island (and the same no doubt would apply to other small and isolated islands, both in Bass Strait and elsewhere in comparable latitudes) the daily temperature range is small and the humidity usually rather high. It takes some time to dry clothes, and a wet sleeping bag is a disaster! On the other hand it is unusual to feel either particularly hot or particularly cold. Another feature of the weather we have noticed is that in the period we were there, late December and January, halcyon periods of beautiful sunny days alternate, perhaps on a three or four day cycle, with blustery and sometimes fierce windy weather—although (and somewhat to our concern, for we rely on a small tank for water supplies) there is surprisingly little rain. We have also noticed that the daily maximum temperatures occur surprisingly late in the afternoon. We hold twenty-eight days' records (see below). On twenty-three of these days a maximum "peak" is discernible. On eight days it occurred between two and four p.m., on nine days between four and six, and on four days between six and eight. Even allowing for our Tasmania Summer Time (T.S.T.), one hour ahead of Eastern Standard Time, it would appear that the maximum is reached on the average some two hours later than on the mainland, and our physicist friends find it hard to account for the phenomenon.

The westerlies provide a dramatic spectacle, for blowing over the island and down the Vale of Erith they sweep down and back over the cove on which we camp, giving rise to remarkable whirlwinds or "williwaws" in the bay. It is quite a common sight to see six or eight fishing boats and yachts each lying on their chains at a different

* Mr. Geoffrey Hope has informed us that a somewhat similar phenomenon is to be found in the Hogan Group.

angle, and on days like these the yachtsmen among us claim it would be possible to sail a circular course in our bay on the one tack.

Living under canvas, as most of us do, we naturally have a pronounced interest in the weather. Three or four days of high wind can make anyone grumpy and out of sorts. Thus we were pleased to accede to the suggestion of Dr. F. A. Berson, of the CSIRO Division of Meteorological Physics (Aspendale, Victoria), that we take with us a self-recording thermohygrograph and miniature Stevenson's screen, thus enabling us to make a twenty-four hour record each day of temperature and relative humidity. Needless to say this bi-functional device was soon christened by us the "hermaphrodite". We are indebted to Dr. Berson for the following analysis of our meteorological records.

The midsummer weather in Bass Strait, like that of south-eastern Australia generally, is controlled by the migratory barometric "highs" in middle latitudes. Unlike most places at the mainland's southern coast, Erith Island, owing to its maritime environment, is however spared the hot northerly winds which at times even reach down to Tasmania.

It may be of some interest to compare the Erith temperature and humidity with those at two selected stations, Aspendale at the eastern shore of Port Phillip Bay, about 130 nautical miles to the north-west, and Pat's River on the west of Flinders Island, about 45 miles to the south-east.

For the period 30 December 1968

to 26 January 1969 the average recorded maximum temperature at Erith Island was 71.7°F as against 79.5° at Aspendale and 73.2° at Pat's River. The minimum temperatures were 59.1° , 57.2° and 55.1° , respectively. The average *daily temperature range* at Erith Island was thus 12.6° , compared with 22.3° at Aspendale and 18.1° at Pat's River, a good indication of the island's pleasantly maritime summer climate. With it goes, of course, some increased *relative humidity*, e.g. in the mentioned period the average relative humidity at 9 a.m. (T.S.T.) was 79 per cent., while at Aspendale (9 a.m. E.S.T.), it was only 49 per cent. and at Pat's River (T.S.T.) 68 per cent. The corresponding average temperatures at 9 a.m. were 63.5° , 68.9° and 67.0° , while the average wet-bulb temperatures were 58.7° , 59.7° and 61.1° .

The highest recorded temperature at Erith Island was 87° on 17 January, when Aspendale had 100° , while at Pat's River it was also 87° . On 8 January, the day of the disastrous Lara fires, Melbourne had 102° , and even at Pat's River the mercury climbed to 97° . Unfortunately, the instrument at Erith Island failed to properly record the temperature during the earlier part of the day, but the maximum temperature did not much exceed 85° . A timely cool change soon after midday reduced the temperature to a pleasant 71° by 3 p.m.*

* We wish to acknowledge the assistance of the CSIRO Division of Meteorological Physics in making available the recording apparatus and the Division's own records, and that of the Bureau of Meteorology in allowing access to the Flinders Island records.

APPENDIX I

As before, we are most grateful to Mr. J. H. Willis, of the National Herbarium, Melbourne, for the identification of the plants we brought back with us, and for his unfailing encouragement.

We are not listing here all plants collected, but only those which are new records.

New to Kent Group

Sand-hill Sword-sedge (*Lepidosperma concavum*), Dover Island, near summit.

? Manna Gum (*Eucalyptus viminalis*), Dover Island (if correctly determined).

Blown grass (*Agrostis avenacea*), Jane's Cove, Erith Island.

Bryum campylothecium (moss), North East Island.

New to Erith Island

Nodding Club-rush (*Scirpus cernuus*), in Cave of Erith.

Sickle Fern (*Pellaea falcata*), under scrub, near West Cove.

New to Dover Island

Silver Banksia (*Banksia marginata*), near summit.

Tree Broom-heath (*Monotoca elliptica*), near summit.

Tasmanian She-oak (*Casuarina monilifera*), near summit.

APPENDIX II

This comprises a list of Bryophytes and Fungi collected in 1967 and 1969. The identifications are by Mr. J. H. Willis.

Erith Island

? *Philonotis* sp. (minute) (in cave); *Sematophyllum homomallum*; *Weissia controversa*.

Dover Island

Campylopus bicolor; *Sematophyllum homomallum* (abundant); *Lophocolea semiteres* (Hepaticae).

North East Island

Bryum campylothecium

Fungi from Dover Island

Phellinus robustus (on ? *Melaleuca ericifolia*); *Trametes cinnabarina*.

APPENDIX III

These lichens of Dover Island, collected in January 1969, have been identified by Mr. Rex Filson, of the National Herbarium, Melbourne.

Cladia aggregata—*C. sullivanii* (mixture); *C. retipora*; *Cladonia sylvatica*; *Anaptychia obscurata*; *Parmelia ferox*; *P. perlata*; *P. reticulata*; *Teloschistes spinosus*; *Usnea* sp. (aff. *U. barbata*); *Ramalina fastigiata*.

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- ⁶ D. F. Dorward: "The Status of the Cape Barren Goose *Cereopsis Novae-Hollandiae*", *International Council for Bird Preservation X Bulletin*, 1967, pp. 56-71; Eric R. Guiler: "The Cape Barren Goose, Its Environment, Numbers and Breeding", *Emu*, Vol. 66, Part 3, February 1967, pp. 211-235.
- ⁷ Colin A. Garreau: "Excursion Holiday in the Kent Group", *Victorian Naturalist*, Vol. 75, No. 86, December 1958, pp. 128-30.
- ⁸ A. H. E. Mattingley: "Birds of the Hogans and other Islands in Bass Straits", *Emu*, Vol. XXXVIII, Part I, 1 July 1938, pp. 7-11.

Hyla nannotis
(Small-eared Tree Frog)

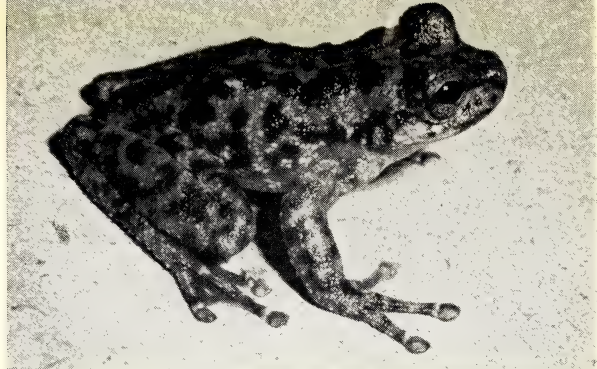


photo: Author

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close to one of the many little waterfalls, they were hard to record effectively. We caught six or seven more individuals; some males and females in amplexus in the shallow pools full of the red and brown leaves were so similar to them in shape and colour that they gave themselves away only by moving.

The dorsal colour is golden brown, and the leaflike shape is accentuated and outlined by the dark brown sides of head and trunk, the two areas being separated from snout to groin by a narrow, cream-coloured ridge. The back is smooth with two small warts behind the eyes and three dark, warty areas forming a triangle at the posterior end of the body. The legs have dark brown crossbars.

This frog is confined to rain-forest creeks in the mountains of North Queensland.

David and I waded up and downstream and disturbed among the crevices of the black rock some specimens of a rather large, very dark and annoyingly active *Hyla* species, with a short, broad head and prominent eye-bulges. We caught several, and the colour changed later to an all-over pattern of dark spots and patches on an olive green background. These turned out to be *H. nannotis*, the Small-eared Tree Frog—the tympanum or eardrum is either invisible, or very indistinct, as

it is, of course, in many other species, but here the specific Latin name records the fact.

We also caught a specimen of *H. eucnemis*, the Green-eyed Tree Frog, previously known as *H. serrata* because of the clearly scalloped outer edges of the feet and forearms. The frog was very dark when caught, but later changed to an attractive patched pattern of light brown and green. In most specimens of this frog, parts of the iris of the eye, and adjoining areas of skin, are a vivid, light green. Specimens may reach 70 mm in length.

Next week-end, Clyde Coleman of the North Queensland Naturalists' Club, organized an excursion to Speewah, in the ranges northwest of Cairns, and I joined the party. We drove in two vans to the old pastoral property of Mrs. Vievers, one of the pioneers of the district. After enjoying her hospitality at the homestead, we set off along the stony creek where the edges of rainforest and sclerophyll forest merged.

At the creek, turned stones revealed a number of small, stocky, extremely active frogs, the most striking feature being the colouring of the smooth, shining ventral surfaces. In some individuals this comprised separate areas of violet, light yellow and green, with some orange or yellow mottling; the ventral surfaces of thighs and legs were orange with violet mottling. The



LEFT: *Sphenophryne pluvialis* from Speewah.

brightness and extent of the coloured areas varied from frog to frog, some being almost uncoloured. The dorsal surfaces are mottled dark brown. A light line runs from the tip of the snout, curves over the eye and becomes part of the general mottled area behind it. The face is dark brown, the iris mottled red.

The tips of the fingers and toes of these frogs are expanded into pads. However, they are not Hylids, but members of the family Microhylidae. This family has over 50 species in New Guinea, and six in Australia, all from rain-forest in the eastern part of Cape York Peninsula. The Speewah specimens turned out to be *Sphenophryne pluvialis*. They were all under 30 mm long.

Further down the creek we found members of another species of the same family, an even smaller frog, *Cophixalus ornatus*, between 20 and 25 mm long, with a smooth skin, medium brown dorsal surface and unpigmented or mottled brown ventral surfaces. A dark stripe runs behind the eye for a short distance, then recommences to run along the side. On the back, posteriorly, is a pair of ocellate spots, and anteriorly, a W-shaped pattern on the shoulders. In this species the short first finger lacks the expanded tip.



BELOW: *Cophixalus ornatus* (Note the "W" pattern between shoulders, and the ocellate spots towards posterior.)

A metamorphosing individual of one of the *Mixophyes* species was found at the edge of the water, but it was too young to be identified.

We found several more specimens of *H. eucnemis*, the Green-eyed Tree Frog, and these, like the one David and I found, were very dark when located, changing later to a map-like pattern of green and brown, with the iris brilliantly green in parts.

Several light brown medium-sized frogs were found which puzzled me. They had a distinct narrow ridge running along the sides from the snout towards the posterior end, where it broke up into separated raised warts. The limbs were faintly cross-barred. The tips of the fingers and toes appeared to be expanded, but I could not



identify them as *Hyla* species, and they were too large for Microhylidae. Clyde Coleman had previously given me a much larger specimen, and these were presumably half-grown. The Aus-

tralian Museum later identified these specimens as *Rana daemeli*, the only Australian species of the Ranidae family, which is better represented in New Guinea.

The following list contains the species mentioned in parts 1 and 2 of "Frog-hunting up the East Coast".

NEW ENGLAND DISTRICT

<i>Kyarranus sphagnicola</i>	<i>Mixophyes fasciolatus</i>	<i>H. bicolor</i>
<i>K. loveridgei</i>	<i>Crinia signifera</i>	<i>H. peroni</i>
<i>Adelotus brevis</i>	<i>C. parinsignifera</i>	<i>H. verreauxi</i>
<i>Limnodynastes tasmaniensis</i>	<i>Uperolia marmorata</i>	<i>H. booroolongensis</i>
<i>L. peroni</i>	<i>Pseudophryne bibroni</i>	<i>H. phyllochroa</i>
<i>L. dorsalis</i>	<i>P. coriacea</i>	<i>H. citropa</i>
<i>L. fletcheri</i>	<i>Hyla aurea</i>	

QUEENSLAND

<i>Hyla bicolor</i>	<i>H. eucnemis</i>	<i>Mixophyes fasciolatus</i>
<i>H. rubella</i>	<i>Uperolia marmorata</i>	<i>Taudactylus acutirostris</i>
<i>H. nasuta</i>	<i>Limnodynastes peroni</i>	<i>Sphenophryne pluvialis</i>
<i>H. rothi</i>	<i>L. dorsalis</i>	<i>Cophixalus ornatus</i>
<i>H. ? lesueuri</i>	<i>L. tasmaniensis</i>	<i>Rana daemeli</i>
<i>H. nannotis</i>	<i>L. ornatus</i>	

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Field Naturalists Club of Victoria

F.N.C.V. General Meeting

11 August, 1969.

The President Mr. E. R. Allan was in the chair and about one hundred members were present. Mr. Allan announced that Mr. Vic. Miller who is 94 years old and our oldest member, had been hit by a car. The good wishes of the members were sent to him for a quick recovery from his accident.

Minutes of the last meeting were taken as read on the motion of Mr. Lewis and Mr. B. Cooper.

Four new members whose names appear in the August "Naturalist" were elected on the motion of Mr. Swaby and Miss J. Woollard. The President announced that Council had appointed Mr. J. Strong to fill the vacancy of Vice-President of the Club after the death of Mr. McKellar.

He also announced that the "Naturalist" will continue in its present form since new arrangements are being made to reduce the *increase* in printing costs by approximately half.

The World Wild Life Foundation Report 1965-7 was available at a cost of \$3.00. Members were reminded that this fund needed support.

Conservation Organizations are holding a meeting in the Melbourne Lower Town Hall on Friday, 29 August to discuss alienation of our Crown Lands.

He also reported that the Board of Works is holding an investigation into Landscape Conservation and Preservation. Members who know of special areas to be considered should contact Mr. Harris of the Board of Works.

Dr. M. Beadnell announced that an Astronomical Society Meeting will be held on 24 August. Miss J. Woollard said that a recent "Current Affairs Bulletin" dealt with Conservation. The subject for the evening was "Seals of Western Port" by Mr. R. N. Warneke. He said that Seal Rock fur seal rookery was one of four off the Victorian coast, the most eastern being off Wingan Inlet, another Rookery Island off Wilsons Promontory and the most western being Julia Percy Island. The Western Port Seal Rocks are actually two islands with a low basalt reef and a very limited area for a boat to come in and only if seas are not rough. He showed pictures contrasting the rough and calm conditions

and of the masses of seals on the protected areas of basalt. A comfortable self contained dwelling is on the highest point and there are two observation covered centres overlooking the main rookery areas. A flying fox is used to get in safely to Black Rock from the hut. Mr. Warneke has three assistants. Usually at least two at a time are in residence, all the time in the breeding season and one week in four in winter. Breeding Bulls come ashore in mid-October and take up territories about 15 feet in area on the basalt and defend that territory against rivals. At the beginning the confrontation is more ritual—barking at each other from a distance. Later in the season when mating is occurring there is a stronger challenge, chest to chest pushing and barking with heads up. Teeth can inflict bites, the canine teeth being heavily developed. They try to grab flippers with teeth and they bury teeth in the skin of the thick neck and try to turn the 620-700 lbs of rival over. There is rarely a death in a fight. They are heavily coated with blubber for reserve as they don't feed between October and Christmas.

When a loser of a conflict leaves the territory, other territory defenders attack him and give him a bad time. Bachelors congregate in a strip inland behind the breeding strip in which a corridor is left for non breeders to go to water.

Usually in the second week in November the first pup appears. There are always females on the rock. Sea gulls do good work in cleaning up membranes. A week or ten days after the birth of a pup the female is ready to mate and seeks the male, some being very persistent. The female fur seal is smaller than the male being from 170-200 lbs.

At the end of November the rookery shows masses of wriggly black pups congregated close together.

A two year old may still be a suckling though usually this species of fur seal nurses the young for one year. One in last season was almost four years old and still a suckling. Probably the mother lost previous pups or the yearling may have been so persistent and aggressive pestering the mother and the new pup, which may die.

There is a high mortality in the pups; 15% die by the end of the second month. Twins are rare. There is a very strong relationship between the pup and the

female who won't accept another pup. At first she nurses the pup for two days before going to sea for food. The pups mass together and when the female returns to the one thousand or so pups she finds hers by vocal recognition. Mr. Warneke demonstrated on a tape recorder the harsh noise of the female barking and the smaller bleat of the pup who leaps out of the mass and rushes up to her and she sniffs and recognizes her own.

The seals are sensitive to heat over 90°F. The fat insulates against the cold of water but they suffer from heat and dip their flippers in the foetid tide pools to keep cool. They also lift flippers to catch a breeze. They do not pant.

If a bull is not near a pool he must go into the sea and returns late in the afternoon.

The officers cannot handle the females when they are attending the pups. They try to mark as many bulls as possible after drugging them with a gas gun forcing a syringe with the drug into them just behind the thick shoulder. The weight of the animal and the suitable amount of drug are considered. Then they can be weighed correctly and examined extensively. The annual marking of pups is important and every January after breeding has ceased and the bulls gone, three weeks are spent catching any pups they can, taking vital statistics, tagging on the flippers, and branding. The officers examine small groups at a time, cooling them with buckets of water. Each is caught by hand, sex checked, body measurements taken, and branded on shaved skin patch with a cold iron brand at -95° which causes less distress than a hot iron. The cold destroys the cells that make the pigment and when hair grows there is a white patch in the shape of the brand e.g. 'O' meaning January 1969. One picture showed a pup with a collar. Some tag returns have been from above the Darby River at Wilson's Promontory to Cape Otway, from Burnie (Tasmania) and from Victor Harbour (S.A.).

In the first breeding season, of the 4-5000 seals ashore some showed nasty wounds. It is thought that these are from big sharks especially White Pointers which have been caught—nine being taken in the winter. One Shark had a tagged seal inside. These sharks were up to 14½ feet long and weighed 1620 lbs.

Information on the diet of seals can be gained by examining undigested food vomit which includes, Cuttlefish, Squid,

Octopus, Crayfish and fish ear bones. In addition to the clear slides illustrating the talk Mr. Warneke brought a strong skull of a seal bull and the skin of a female fur seal.

The President thanked Mr. Warneke for the interesting talk and members showed their appreciation by acclamation and their keen interest by asking many questions. Answering a question on their span of life Mr. Warneke said that bulls may be 12 or 15 years old before being able to gain breeding territory. Captives are known to live 30 years but the average life would be much less.

The Secretary Mr. D. Lee mentioned several books of interest to Naturalists. These included Densey Clyne's book on Frogs \$4.25.

Snowy Mountain Walks \$1.50, a book on Australian Desert Life, and others on Bushwalking and Camping.

The Secretary brought to notice a book received "Australian Fly Catchers" by Brigadier Officer \$5.00

Mr. D. McInnes appealed for helpers for the Nature show and gave out leaflets and posters advertising it. Barry Cooper sold many "Save the Little Desert" car stickers (2 cents).

Exhibits:

Mr. A. J. Swaby brought two Little Desert plants—

1. Jumping Jack Wattle, *Acacia enterocarpa* from near Kiata. The zig-zag seed pod suggests the common name.
2. Spiny Wattle *Acacia spinescens* which also extends to W.A.; usually there is no sign of a leaf after the seedling stage. This is easy to strike from the seed.

He also brought flame pea, *Chorizema cordatum*; woolly grevillia *G. lanigera* (W.A. Vic. etc.) Pink spider flowers. *G. linearis* in an unusual white form, a tall shrub frequently in bloom. A dying coast Wattle showed the production of numerous buds.

Mr. J. Strong showed 2 molluscs—

1. *Pictonerita ovalanensis*, necklace shell from Mangrove swamps near Cairns — under the microscope these revealed an infinite variety of patterns.
2. Scaly lined limpet *Notoacmea scabrilirata* from Tulum Western Port showing colour and pattern variations.

Mr. D. McInnes showed fossil fresh water ostracods from limestone of a fossil lake from Coimadai where this "water flea" like deposit is 7 inches thick.

Mr. J. Sault brought several lichens and demonstrated the spore forming heads under the microscope.

Marine Biology and Entomology Group 4th August, 1969.

Mr. Condron chaired the meeting which was attended by 14 members.

The secretary read a letter from A. B. V. Channel 2 in answer to a request for a repeat of their program "The World About Us". They regretted that owing to restrictions of copyright, they would be unable to comply with our request.

As this was the last meeting before the Nature Show discussion took place about the Group's exhibit. At the moment there are some lighting difficulties which we hope to resolve before the show commences. Mr. Condron and Miss Forse have offered to check in this respect. Mr. Strong offered to assist Dr. Smith with regard to a display of shells and other marine specimens. Mr. McInnes showed a plan of the show layout and explained where different exhibits are to be placed.

It was announced that there would be no meeting of this Group in September as the night would fall on the first night of the Show. The Secretary also announced that he and Mr. Strong would be away for the October meeting. Mrs. Z. Lee kindly offered to show some of her nature slides on that night.

Dr. Brian Smith advised that the next work-in at the Museum would be held on 16 August at 10.30 a.m. Members were invited to participate.

Mr. R. Condron stated that the Entomological Society was unable as advertised to show films of the fruit fly and sirex wasp at their last meeting. These are now to be shown on Friday 22 August at the Herbarium. Members of the F.N.C.V. would be welcome.

Exhibits—

Miss Jenny Forse showed some larvae of some species of moth; these fed on the

leaves of the Blue Gum. Also a nest of sugar ants collected for display at the Nature Show. Miss Forse gave a short and very interesting talk on these.

Sepiidae species *Arctosepia braggi*, (VERCO.), collected at Port Lincoln, South Australia. Dr. Smith explained that although the bones of this species had been found, this was the first time a live specimen had been taken. He went on to say that 37 species of this family had been described from Australian waters, only 10 of which had been described from the entire animal.

Miss White showed two "saw flies", male and female and explained that the female has a saw with which she penetrates the leaf. Although commonly called a saw fly, Miss White said that actually these were members of the Order HYMENOPTERA, and were, therefore, wasps. Also a katydid or long-horned grasshopper, and a specimen of stick insect.

Mr. McInnes showed a marine mussel under a Club Microscope. Examination of the growth on the shell revealed a species of colonial verticella, probably *Epistylus*, and also what looked like a small species of Hydrozoa.

Mrs. Strong showed the case of a species of case moth *Thyridopterix herichii*, the ribbed case moth, family Psychidae, taken at Mount Piper near Broadford.

Mr. Ken Strong showed under the Club Leitz Microscope, a slide which he had made of a fairy fly. He described how he had found it in some pond water, and said that it was parasitic on may fly larvae.

Mr. J. Strong showed under a Club microscope, shells of "The Necklace Nerite", family NERITIDAE, species *Pictонеритина ovalanensis*, collected by himself and Mrs. Strong at Yule Point near Cairns, North Queensland in 1962 taken from a mangrove swamp. These were shown to demonstrate the great variety of colour and pattern in this species.

(cont. from page 253)

follows their previous high standard of publication.

The small format of the book poses difficulties for its layout and design. It is composed of alternate pages of printing, and complete pages of colour photographs. This necessitates the captions for the illustrations being printed on the same page as the text. The text is arranged in two columns with the captions sometimes commencing below the first column, therefore requiring the text to be continued on the next page. In some cases, especially where the captions are also continued, this becomes quite confusing to the reader.

The short Introduction briefly relates how some of the plant families were named in honour of early Australian explorer-botanists.

The book includes 32 families of plants, with over 100 species illustrated and many more described. It is arranged according to J. Hutchinson's *The Families of Flowering Plants*. The authors have tried to present the main groups of plants giving a geographical coverage at the same time showing

"the scope and contradictions of Australia's flora". Little known species as well as popular garden varieties are included.

Under each family an idea is given of the distribution in Australia, and mentions other countries where the family occurs. The number of genera and species in a family is noted, plus a description of the plant such as flowers and leaves, with any interesting scientific values or notable features it may have. Interesting facts concerning the history of family names accompanies some sections.

The book's value is increased by the comprehensive glossary of terms used in the text, a good index to both text and photographs with common and botanical names listed, and a bibliography of 19 publications.

In order to illustrate lesser known species, *Australian Wildflowers in Colour* is useful to the botanist and layman as a supplementary text. It is excellent as an introductory book to keep alive a young person's awakening interest in Australian flora, and it would make an ideal present for overseas visitors and friends.

Sue Filson

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